Evaluating the Alignment of the Dakota STEP-A Alternate Assessments with South Dakota's Alternate Academic Content and Achievement Standards in Reading and Mathematics at Grades K – 12

Final Report

Prepared for

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Background

The Dakota STEP-A Reading and Mathematics Tests, developed by Harcourt Educational Measurement (HEM) in collaboration with South Dakota's Department of Education (SD DOE), consists of two components. The first component consists of a rating scale that is completed by an educational professional (typically the student's teacher). The second component consists of a portfolio, assembled in cooperation with the student by an educational professional (typically the student's teacher) that provides a body of evidence to support inferences about how the student is performing on the SD Alternate Academic Content and Achievement Standards in Reading and Mathematics. This second component of the Dakota STEP-A Alternate Reading and Mathematics Tests is still under development; therefore, this study focused only on the alignment of the rating scale component of the Dakota STEP-A tests to these Alternate Content Standards.

When developing the rating scale component of the Dakota STEP-A Alternate Reading and Mathematics Tests, HEM created items that they intended to align with South Dakota's Reading or Mathematics Indicators and Alternate Content Standards. On September 19th and 20th, 2005 the Buros Institute for Assessment Consultation and Outreach (BIACO) conducted two alignment studies in Sioux Falls, South Dakota, to evaluate how well the Dakota STEP-A Alternate Reading and Mathematics items align with these same Indicators and Alternate Content Standards. When BIACO conducted the alignment studies, a panel of 39 educators was provided with the Indicators and Alternate Content Standards for each grade level and content area. The panelists were instructed to identify which, if any, of the Indicators and Alternate Content Standards align with each item in the respective Dakota STEP-A test. They were also given the opportunity to reconcile any discrepancies that existed between HEM's intended item alignment and the panelists' assignment of these items to the Indicator and Alternate Content Standard.

In order to have confidence that performance on the tests provides useful information for interpreting how well students are achieving on South Dakota's Alternate Content Standards, it is essential that the items on these tests align with these Standards and that a sufficient number of items are represented at the Indicator level. Therefore, the purpose of the alignment studies was 1) to provide results on the degree to which the rating scale component of the Dakota STEP-A Alternate tests are aligned with South Dakota's Alternate Content Standards and Achievement levels in Reading and Mathematics for students at Grades K-12; and 2) to provide evidence on the sufficiency of items at the Indicator level.

Procedures

Staff from South Dakota's Department of Education identified South Dakota educators from different grade levels and special education for the Alternate Reading and Mathematics Alignment Studies. A total of 39 educators participated in the alignment studies: 21 for reading and 18 for mathematics. The reading educators had an average of 20 years of teaching experience, while the mathematics educators had an average of 19 years. Twenty-three of the educators held advanced degrees. A list of the participating educators by content area is provided in Appendix A.

Educators were divided into four grade level panels within their respective content area: primary (5 reading, 4 mathematics), elementary (6 reading, 5 mathematics), middle school (6 reading, 5 mathematics), and high school (4 for both), where each panel consisted of 2 or 3 general education and 2 or 3 special education teachers. Each panel examined the Dakota STEP-A rating scale test items within their respective content area and grade levels. The primary panel examined tests for Grades Kindergarten, 1, and 2; the elementary panel examined tests for Grades 3, 4, and 5; the middle school panel examined tests for Grades 6, 7, and 8; and the high school reading panel examined tests for Grades 9, 10, 11, and 12. The High School mathematics panel examined one test that would be given to all high school students regardless of grade.

After a brief explanation of the purpose of the study and the utility of alignment results, the panelists went into their respective groups and began a practice and training session to ensure sufficient understanding and familiarity with the alignment tasks and rating forms.

Together with a facilitator, panelists discussed the Alternate Content Standards and Achievement level descriptors for each grade level test. They received copies of the relevant South Dakota state Reading or Mathematics Indicators and Alternate Content Standards and were asked to review them, first independently, and then with their grade level group. After they had thoroughly discussed the Indicators and Alternate Content Standards for a particular grade level, the panelists were given the Dakota STEP-A rating scale test items and rating forms. A sample rating form can be found in Appendix B. Panelists determined the match of the items to a relevant Indicator and Alternate Content Standard (ACS), if any existed, and then determined the achievement level for each item. They were instructed to mark a “1” for a match at the Introducing level, a “2” to indicate a match at the Developing level, a “3” to indicate a match at the Applying level, and a “4” to indicate a match at the Advancing level. The panelists were asked to align each test item to only one Indicator and ACS. If multiple matches were possible, then the Indicator and ACS that primarily aligned with the test item was selected. If no match was found, the panelists indicated “No Match.”

Panelists first made independent judgments, and then discussed their individual ratings within their group. The groups then reached a consensus on the alignment and Achievement level of each item, and marked their results in the group consensus rating form. After group consensus was established for all items, the panels received information on the item alignment as recommended by HEM. Each panel was instructed to reconcile any disagreement between their group consensus alignment results and HEM’s alignment recommendations. They could either select the HEM recommendation, their original group consensus, another Indicator and Alternate Content Standard, or indicate there was no match to any Indicators and Alternate Content Standards by marking an “X”. If a match was made, they indicated the appropriate achievement level.

At the conclusion of the workshop, panelists also completed an evaluation of the training session and the alignment rating process.

Results

The results for Reading and Mathematics are reported separately. Summary results for Reading and Mathematics are given by Indicator before and after reconciliation. All other results are based on the alignment of items after reconciliation. For Reading, the distribution of items across Achievement levels is reported at the Indicator level. For Mathematics, the distribution of items across Achievement levels is reported at the Indicator level within each of the five goal areas.

Reading results

The summary reading alignment results are shown in Table 1. The results on the left side of the table report the agreement rate between the panelists' group consensus results and HEM's intended alignment results prior to reconciliation. The right side of the table reports the agreement results after reconciliation.

Agreement rates with HEM's alignment results before and after reconciliation ranged from 60% (Grade 5 both before and after) to 100% (Grades Kindergarten, 2, 11, and 12 before and K, 2, 8, 11, and 12 after). Agreement was only counted when both the Indicator and ACS matched the HEM recommendation. As a result of the reconciliation process, the agreement rate with HEM's recommendation increased slightly at Grades 3, 6, 7, and 10 to 94% or higher, and substantially at Grade 8 (from 81% to 100%) and Grade 9 (from 61% to 93%), thus surpassing the alignment studies recommended critical rate of 75%. Grades 4 and 5, however, remained below that recommended rate (67% and 60%, respectively).

Of all the items not aligned to the HEM intended Indicator and ACS following reconciliation, 28 items were not matched to any South Dakota Indicator and ACS. The majority of these items were found in Grades 4 and 5 (9 and 13 items, respectively). Grades 4 and 5, together with Grade 1, also showed the majority of contested items whose original alignment from the group consensus was maintained after reconciliation. Overall, there were 17 contested items in the Dakota Step-A Reading rating scale tests for which the group consensus alignment was upheld following reconciliation. There were 2 items in Grade 9, which were re-aligned to an Indicator and ACS different from the group consensus and the HEM recommendation. The item-by-item panel recommendations for pre- and post-reconciliation are shown in Appendix D.

Across grade level tests, with a few exceptions the majority of items were identified as matching Indicators 1 and 2. The number of items matching Indicator 1 ranged from 9 (Grade 5) to 27 (Grade 8), while Indicator 2 typically had 7 or more item matches, except for Kindergarten (4). Indicator 3 had the fewest matches, never exceeding 14 (Grade 10) across the grade levels, but Grades 6 through 12 all had at least 8 item matches. A notable exception to this trend was found at Grade 11 where Indicator 3 did not have the fewest matches. Grades Kindergarten and 1 had no items matching Indicator 3. Five grade levels (Kindergarten, 1, 4, 5, and 11) had fewer than 6 items matched to Indicator 4. All other grade levels had between 10 to 22 items matched to Indicator 4. A target of at least 6 items per Indicator, ACS or achievement level is the recommended number of items to assume sufficient coverage. The number of items by Indicator and Achievement level for each grade level are presented in the last column of Table 2 and summarized below for all grade levels by Indicator and Achievement level.

Results at the Indicator level indicated that Grades 6 – 10 and 12 all met the target of 6 items per Indicator for all Indicators 1 – 4; however, Grades 2 and 3 didn’t meet it for Indicator 3 and Grade 11 didn’t meet it for Indicator 4. In addition, Grades 1, 4, and 5 only met the target for Indicator 1 and 2, while Kindergarten only met the target for Indicator 1.

At the Achievement level, results showed that across the grade levels the majority of the items was typically found to be at the Advancing level, ranging from 8 (Grades Kindergarten, 1, and 12) to 35 (Grade 8). A notable exception to this trend was found at Grade 12 where the Advancing category had the lowest number of items. At the Applying level, the number of items assigned to this Achievement level was 8 or higher for most grades, except Kindergarten and Grade 5, which only had 4 items at this Achievement level. At all grade levels the number of items rated at the Developing level was always 6 or higher except for Kindergarten (only 4 matches) and Grade 4 (only 2 matches). Tests for Grades 3, 8, 10, 11, and 12 had at least 6 items assigned to the Introducing level, while Grades Kindergarten, 1, 2, and 7 had only 1 item; 2 in Grade 4; 3 in Grade 5; 4 in Grade 6; and 5 in Grade 9.

Mathematics results

The mathematics alignment results are summarized in Table 3. The table shows agreement rates before and after reconciliation, with agreement defined as match of Goal, Indicator, and ACS. Prior to reconciliation the alignment to the recommended HEM Indicators and ACS ranged from 63% (Kindergarten) to 99% (Grade 7). Following reconciliation, the alignment to the intended HEM Goals, Indicators and ACS ranged from 73% (Kindergarten) to 100% (Grades 4 and 6). Increases of agreement rates over the course of reconciliation were relatively slight and never exceeded more than 10%. All grade levels exceeded the critical agreement rate of 75% for alignment decisions, except Kindergarten, which stayed slightly below that rate at 73%.

The majority of the items not aligned to the HEM intended Goal, Indicator, and ACS kept their original group consensus alignment. Seven items were not matched to any South Dakota Goal, Indicator, and ACS, 6 of these items were found in Kindergarten and 1 item was found in Grade 2. There were 4, 4, and 3 items in Kindergarten, Grade 1 and Grade 8, respectively, which had been re-aligned to a Goal, Indicator, and ACS different from the group consensus and the HEM recommendation. The detailed item-by-item panel recommendations for pre- and post-reconciliation are shown in Appendix E.

All Goal areas across the grade level tests, except the Statistics and Probability goal at Kindergarten, had at least 6 items matched to these goals. The highest number of matches was found for Algebra (48) at Grade 7 and Number Sense (48) at Grade 5; the lowest number of matches was found for the Statistics and Probability goal at the Kindergarten level (no items). The target for assuming an adequate or sufficient number of items is 6 per Indicator. The number of items per Goal by Indicator and Achievement level are presented in Table 4 and summarized below for all grade levels by Goal, Indicator, and Achievement level.

- *Algebra*: Results at the Indicator level showed that only Grades 1, 7, and 8 met the target of 6 items for each of the applicable Indicators. High School didn't meet the target for Indicator 4. The Kindergarten test did not reach the target for any of the 3 applicable Indicators, although it met the target for the overall goal area (6 items). Similarly, Grade 5 lacked a sufficient number of items for all Indicators but Indicator 1. There were an insufficient number of items for Indicator 3 and 4 at Grades 2 and 4, for Indicator 3 at Grade 3, and for Indicators 1 and 2 at Grade 6.

  At the Achievement level, the number of items per Indicator and Achievement level very rarely reached the target number of six items, largely because of the relatively high number of Indicators in this goal area. The Introducing level is only sufficiently covered within the Algebra goal for Grades 3, 4, 7, and 8, but only once at Indicator 1 in Grade 7. At the Developing level, Grades 2, 6, 7, 8, and High School show a sufficient number of items at this goal, but only for Grades 6 and 7 is this target also met at Indicator 3. The highest number of items was found at the Applying level for all grades except Kindergarten and Grades 4, 6, and 7. Grades 1, 2, and High School also reached the target for Indicator 1 or Indicator 2 at this Achievement level, while Grade 8 met this target at Indicators 1 and 4 for this Achievement level. The 6-item target for the Advancing level was only met at the goal level in Grades 1, 3, and High School.

- Geometry: For the Geometry goal, the target was met for Indicator 1 at all grade levels except Kindergarten and High School. The target for Indicator 2 was met at Grades 5, 6, 7, and High School. However, at the goal level, all 10 grade levels met the 6-item target.

  Of the four Achievement levels only the Applying level reached a sufficient number of items at the goal level in most grades (not in Grade 1 and High School). At this Achievement level, Grades 3, 5, 7, and 8 also met the target for either Indicator 1 or Indicator 2. The other Achievement levels across the different grades were not sufficiently covered, except for the Introducing level in Grade 7 at Indicator 1 and the Developing level in Grade 6 at the goal level.

- Measurement: All grade-level tests met the 6-item target for Indicator 1, the only Indicator in this goal area. At the Introducing level, Grades 3, 5, 6, 7, and High School met the target, and at the Developing level all but Kindergarten, and Grades 3 and 6 had a sufficient number of items in this goal area. At the Applying level, Kindergarten through Grade 5 showed sufficient coverage of the goal area, but Grades 6 through High School failed to show sufficient coverage. At the Advancing level only Grade 2 met the target number of items.
- Number Sense: Of the three Indicators in this goal area, Indicator 1 had a sufficient number of items at all grade levels, whereas none of the grade levels reached the target for Indicator 3. The target for Indicator 2 was met at Grades 4, 5, 7, 8, and High School, but not at Grades 1, 2, 3, and 6. Note: Indicator 2 was not required at the Kindergarten level for this goal.

  Of the four Achievement levels, the Developing and Applying levels had the highest coverage of items. The Developing level was sufficiently covered in most grade level tests, but not Grades Kindergarten, 1, and 2. At the Applying level the target of 6 items was met for Grades 1 through 8 at the goal level, but the only Indicator with sufficient coverage was Indicator 1. The target for the Introducing level was only met in Grade 5 at Indicator 1, and in Grade 7 at Indicator 2. The target for the Advancing level was only met in the High School test at the goal level.

- Statistics and Probability: There was a sufficient number of items for Indicator 1 in all Grade levels except for Grades Kindergarten, 6, 7, and 8. Only Grades 6, 8, and High School reached a sufficient number of items for Indicator 2. Note: Indicator 2 was not required at the Kindergarten level. All Grade levels had a sufficient number of items at the goal level except Kindergarten.

Of all grade levels, only High School met the target of six items at three of the four Achievement levels (not at the Applying level). None of the other grade levels reached this target for any of the Achievement levels, except Grade 6 at the Advancing level and Grade 7 at the Applying level, each for the overall goal area.

Evaluation Results

Thirty-six of the 39 panelists indicated that the *right amount of time* was allocated to the training session. One panelist found there was *too much time* and two panelists found there was *too little time* for training. All of the panelists judged that either *sufficient* or *more than enough time* was allotted for the operational rating sessions.

Twenty-five panelists felt *confident* with their judgments about the alignment of items to the state alternate content standards, and the remaining 14 panelists were *somewhat confident*. With respect to the alignment of items to Achievement level descriptors, 28 panelists indicated they were *confident* about their judgments, 10 panelists were *somewhat confident*, and one panelist felt *not very confident*. All panelists rated the Alignment Study overall as either *totally successful* (19) or *successful* (20). Evaluation comments by content area are provided in Appendix C.

Conclusions

For the most part, there was a strong level of agreement between Indicator and ACS (as intended by HEM) and educator ratings. For alignment studies, it is generally acceptable if the agreement level is 75% or higher. Using this criterion, results from reading tests in Grades 4 and 5 are still concerning, while the only concerning level of agreement for mathematics was the test for Kindergarten.

Across all 13 reading tests, strong coverage was found across all Indicators for tests in Grades 6, 7, 8, 9, 10, and 12. However, the remaining reading tests lacked coverage in one or more Indicator levels. In particular, the Kindergarten reading test lacked adequate coverage in Indicators 2 - 4, while the reading tests at Grades 1, 2, 3, 4, 5, and 11 all lacked coverage in either Indicator 3 or 4, or both.

In mathematics, all grade level tests met the target of 6 items at the goal level for Algebra, Geometry, Measurement, and Number Sense. All grade level tests except Kindergarten met this target for the goal level of Statistics and Probability. The best alignment was found in the Goal area of Measurement, which had adequate coverage for the only Indicator across all 10 tests. In the Goal area of Algebra, adequate coverage was found for all applicable indicators for tests in Grades 1, 7, and 8. Geometry tests at Grade levels 5 – 7 had adequate coverage for all Indicators. In Number Sense, not one grade level test had adequate coverage across all applicable

Indicators, but all grade level tests did have adequate coverage for Indicator 1 in this Goal area. In Addition, the Goal area of Statistics and Probability only had adequate coverage for either Indicator 1 or 2 across some Grade levels except for Kindergarten and Grade 7, but the High School test had adequate coverage at both Indicators within this Goal area.

Problems were also identified in the ability of performance on reading and mathematics tests to accurately and reliably make Achievement level classification decisions for students. It was frequently the case that reading tests had too few items identified at the Introducing level for tests in Grades Kindergarten, 1, 2, 4, 5, 6, 7, and 9. However, there were a sufficient number of items identified at all four Achievement levels for reading tests in Grades 3, 8, 10, 11, and 12. Also, reading tests in Grades 1, 2, 6, and 7 had sufficient coverage in number of items at the three highest Achievement levels. For mathematics, some goal areas within grade levels did have enough items for three of the achievement level classifications, but it was clearly the case that the mathematics tests as a whole did not have adequate coverage, regardless of Indicator, for four Achievement levels.

It appears some more work needs to be done in order to bring these Dakota STEP-A reading and mathematics tests into sufficient alignment with South Dakota’s Indicators and ACS for reading and mathematics. In some cases, decisions will need to be made about the revision of items and development of new ones in both reading and mathematics. Furthermore, in order to make meaningful and trustworthy classifications of students to these Achievement level classifications, more items need to be developed at the Indicator by Achievement level to be able to provide sufficient information to make these classification decisions.

Finally, some additional alignment to the Alternate Content Standards may be realized when the second component of the Dakota STEP-A assessment program (i.e., the Portfolio/Body of Evidence component) is brought on board. Alignment considerations can be examined once this component is fully designed to determine what additional alignments to the Alternate Content Standards are provided through this component of the Dakota STEP-A tests.

Table 1

Alignment of Dakota STEP-A Reading Items to Harcourt Intended Alignment Before and After Reconciliation

		Pre-Reconciliation				Post-Reconciliation							
								Disagree with Harcourt					
	Number of Test Items	Agree with Harcourt		Disagree with Harcourt		Agree with Harcourt		Kept Original Group Consensus		Aligned to Other Indicator & ACS		Not Aligned to any SD Indicator & ACS	
INDICATOR & ALTERNATE CONTENT STANDARD (ACS)													
Kindergarten	17	17	100%	0	0%	17	100%	0	0%	0	0%	0	0%
Grade 1	32	27	84%	5	16%	27	84%	5	16%	0	0%	0	0%
Grade 2	43	43	100%	0	0%	43	100%	0	0%	0	0%	0	0%
Grade 3	51	46	90%	5	10%	48	94%	0	0%	0	0%	3	6%
Grade 4	42	28	67%	14	33%	28	67%	5	12%	0	0%	9	21%
Grade 5	42	25	60%	17	40%	25	60%	4	10%	0	0%	13	31%
Grade 6	61	59	97%	2	3%	60	98%	1	2%	0	0%	0	0%
Grade 7	64	62	97%	2	3%	63	98%	1	2%	0	0%	0	0%
Grade 8	74	60	81%	14	19%	74	100%	0	0%	0	0%	0	0%
Grade 9	67	41	61%	26	39%	62	93%	1	1%	2	3%	2	3%
Grade 10	72	67	93%	5	7%	71	99%	0	0%	0	0%	1	1%
Grade 11	63	63	100%	0	0%	63	100%	0	0%	0	0%	0	0%
Grade 12	47	47	100%	0	0%	47	100%	0	0%	0	0%	0	0%

Table 2
Post-Reconciliation Reading Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - 12

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Kindergarten	**1**	**4**	**4**	**8**	**17**
1	1	3	4	5	**13**
2	0	1	0	3	**4**
3	0	0	0	0	**0**
4	0	0	0	0	**0**
Grade 1	**1**	**9**	**8**	**8**	**27**
1	0	4	4	2	**10**
2	1	4	4	5	**14**
3	0	0	0	0	**0**
4	0	1	0	2	**3**
Grade 2	**1**	**12**	**12**	**18**	**43**
1	1	4	3	3	**11**
2	0	4	5	8	**17**
3	0	1	0	4	**5**
4	0	3	4	3	**10**
Grade 3	**6**	**6**	**16**	**20**	**48**
1	3	3	5	9	**20**
2	0	0	6	7	**13**
3	0	1	2	1	**4**
4	3	2	3	3	**11**
Grade 4	**2**	**2**	**9**	**15**	**28**
1	1	1	4	5	**11**
2	1	0	1	6	**8**
3	0	1	2	1	**4**
4	0	0	2	3	**5**
Grade 5	**3**	**6**	**4**	**12**	**25**
1	2	2	1	4	**9**
2	1	2	0	4	**7**
3	0	0	2	2	**4**
4	0	2	1	2	**5**

Table 2 (continued)
Post-Reconciliation Reading Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - 12

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 6	**4**	**12**	**22**	**22**	**60**
1	3	2	7	8	**20**
2	0	3	7	6	**16**
3	1	3	1	3	**8**
4	0	4	7	5	**16**
Grade 7	**1**	**12**	**21**	**29**	**63**
1	1	5	8	11	**25**
2	0	2	6	6	**14**
3	0	3	0	5	**8**
4	0	2	7	7	**16**
Grade 8	**7**	**14**	**18**	**35**	**74**
1	6	10	4	7	**27**
2	1	1	7	8	**17**
3	0	1	2	5	**8**
4	0	2	5	15	**22**
Grade 9	**5**	**19**	**17**	**23**	**62**
1	4	3	4	3	**12**
2	0	9	8	11	**28**
3	1	5	2	2	**10**
4	0	2	3	7	**12**
Grade 10	**9**	**17**	**20**	**25**	**71**
1	5	2	5	6	**18**
2	0	8	8	6	**22**
3	3	3	3	5	**14**
4	1	4	4	8	**17**
Grade 11	**7**	**20**	**19**	**17**	**63**
1	3	4	7	3	**17**
2	3	13	5	12	**33**
3	1	2	4	1	**8**
4	0	1	3	1	**5**

Table 2 (continued)
Post-Reconciliation Reading Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - 12

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 12	**10**	**13**	**16**	**8**	**47**
1	4	5	1	2	**12**
2	4	4	5	2	**15**
3	2	3	4	0	**9**
4	0	1	6	4	**11**

Table 3

Alignment of Dakota STEP-A Mathematics Items to Harcourt Intended Alignment Before and After Reconciliation

		Pre-Reconciliation				Post-Reconciliation							
								Disagree with Harcourt					
	Number of Test Items	Agree with Harcourt		Disagree with Harcourt		Agree with Harcourt		Kept Original Group Consensus		Aligned to Other Goal, Indicator, & ACS		Not Aligned to any SD Goal, Indicator, & ACS	
GOAL, INDICATOR, & ALTERNATE CONTENT STANDARD													
Kindergarten	51	32	63%	19	37%	37	73%	4	8%	4	8%	6	12%
Grade 1	89	81	91%	8	9%	81	91%	4	4%	4	4%	0	0%
Grade 2	111	99	89%	12	11%	103	93%	7	6%	0	0%	1	1%
Grade 3	105	96	91%	9	9%	104	99%	1	1%	0	0%	0	0%
Grade 4	113	110	97%	3	3%	113	100%	0	0%	0	0%	0	0%
Grade 5	136	129	95%	7	5%	131	96%	4	3%	0	0%	0	0%
Grade 6	101	93	92%	7	7%	101	100%	0	0%	0	0%	0	0%
Grade 7	145	143	99%	2	1%	143	99%	2	1%	0	0%	0	0%
Grade 8	108	94	87%	14	13%	105	97%	0	0%	3	3%	0	0%
High School	132	129	98%	3	2%	129	98%	3	2%	0	0%	0	0%

Table 4
Post-Reconciliation Math Alignment Results:
Goal/Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Goal/Indicator	Introducing	Developing	Applying	Advancing	Total
Kindergarten					
Algebra	**0**	**4**	**2**	**0**	**6**
2	0	0	1	0	**1**
3	0	0	0	0	**0**
4	0	4	1	0	**5**
Geometry	**0**	**1**	**8**	**0**	**9**
1	0	0	5	0	**5**
2	0	1	3	0	**4**
Measurement	**2**	**3**	**9**	**0**	**14**
1	2	3	9	0	**14**
Number Sense	**2**	**1**	**4**	**0**	**7**
1	2	1	4	0	**7**
3	0	0	0	0	**0**
Stats & Prob	**0**	**0**	**0**	**0**	**0**
1	0	0	0	0	**0**

Table 4 (continued)
Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 1					
Algebra	**0**	**5**	**11**	**7**	**23**
2	0	1	6	4	**11**
3	0	2	2	2	**6**
4	0	2	3	1	**6**
Geometry	**2**	**3**	**2**	**4**	**11**
1	2	2	2	2	**8**
2	0	1	0	2	**3**
Measurement	**4**	**7**	**11**	**3**	**25**
1	4	7	11	3	**25**
Number Sense	**1**	**5**	**8**	**2**	**16**
1	1	3	6	2	**12**
2	0	2	0	0	**2**
3	0	0	2	0	**2**
Stats & Prob	**0**	**2**	**2**	**2**	**6**
1	0	2	2	2	**6**
2	0	0	0	0	**0**

Table 4 (continued)
Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 2					
Algebra	**0**	**8**	**14**	**4**	**27**
2	1	5	8	3	**17**
3	0	1	4	0	**5**
4	0	2	2	1	**5**
Geometry	**2**	**5**	**6**	**0**	**13**
1	0	5	3	0	**8**
2	2	0	3	0	**5**
Measurement	**4**	**6**	**12**	**7**	**29**
1	4	6	12	7	**29**
Number Sense	**2**	**4**	**15**	**3**	**24**
1	2	3	9	3	**17**
2	0	0	3	0	**3**
3	0	1	3	0	**4**
Stats & Prob	**0**	**1**	**4**	**5**	**10**
1	0	1	4	2	**7**
2	0	0	0	3	**3**

Table 4 (continued)
Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 3					
Algebra	**7**	**5**	**7**	**6**	**25**
1	3	2	1	3	**9**
2	3	1	3	1	**8**
3	0	0	1	1	**2**
4	1	2	2	1	**6**
Geometry	**1**	**1**	**9**	**2**	**13**
1	1	1	7	1	**10**
2	0	0	2	1	**3**
Measurement	**6**	**2**	**11**	**2**	**21**
1	6	2	11	2	**21**
Number Sense	**5**	**12**	**15**	**2**	**34**
1	5	12	11	0	**28**
2	0	0	2	0	**2**
3	0	0	2	2	**4**
Stats & Prob	**1**	**4**	**5**	**1**	**11**
1	1	1	4	1	**7**
2	0	3	1	0	**4**

Table 4 (continued)
Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 4					
Algebra	**8**	**5**	**7**	**4**	**24**
1	3	2	4	2	**11**
2	4	1	3	1	**9**
3	0	0	0	0	**0**
4	1	2	0	1	**4**
Geometry	**3**	**5**	**7**	**3**	**18**
1	3	5	5	1	**14**
2	0	0	2	2	**4**
Measurement	**5**	**6**	**8**	**5**	**24**
1	5	6	8	5	**24**
Number Sense	**4**	**18**	**12**	**2**	**36**
1	2	13	9	0	**24**
2	1	2	3	2	**8**
3	1	3	0	0	**4**
Stats & Prob	**3**	**1**	**3**	**4**	**11**
1	2	1	2	3	**8**
2	1	0	1	1	**3**

Table 4 (continued)
Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 5					
Algebra	**1**	**5**	**10**	**4**	**20**
1	1	1	4	2	**8**
2	0	1	1	1	**3**
3	0	2	2	0	**4**
4	0	1	3	1	**5**
Geometry	**4**	**5**	**10**	**5**	**24**
1	2	1	3	1	**7**
2	2	4	7	4	**17**
Measurement	**6**	**8**	**11**	**1**	**26**
1	6	8	11	1	**26**
Number Sense	**14**	**20**	**10**	**4**	**48**
1	9	11	8	2	**30**
2	5	5	2	2	**14**
3	0	4	0	0	**4**
Stats & Prob	**1**	**4**	**5**	**1**	**11**
1	1	2	4	2	**9**
2	1	1	2	1	**5**

Table 4 (continued)
Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 6					
Algebra	**4**	**13**	**4**	**3**	**24**
1	0	0	0	0	**0**
2	0	3	1	0	**4**
3	3	8	2	1	**14**
4	1	2	1	2	**6**
Geometry	**3**	**9**	**7**	**1**	**20**
1	1	5	3	1	**10**
2	2	4	4	0	**10**
Measurement	**9**	**5**	**5**	**1**	**20**
1	9	5	5	1	**20**
Number Sense	**2**	**16**	**8**	**0**	**26**
1	2	11	4	0	**17**
2	0	3	1	0	**4**
3	0	2	3	0	**5**
Stats & Prob	**0**	**4**	**1**	**6**	**11**
1	0	3	1	1	**5**
2	0	1	0	5	**6**

Table 4 (continued)
Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 7					
Algebra	**11**	**21**	**15**	**1**	**48**
1	8	5	5	1	**19**
2	1	3	3	0	**7**
3	1	12	3	0	**16**
4	1	1	4	0	**6**
Geometry	**6**	**4**	**8**	**3**	**21**
1	6	4	1	3	**14**
2	0	0	7	0	**7**
Measurement	**6**	**11**	**3**	**0**	**20**
1	6	11	3	0	**20**
Number Sense	**11**	**16**	**16**	**3**	**46**
1	1	6	11	2	**20**
2	9	9	3	0	**21**
3	1	1	2	1	**5**
Stats & Prob	**0**	**2**	**6**	**2**	**10**
1	0	1	3	1	**5**
2	0	1	3	1	**5**

Table 4 (continued)

Post-Reconciliation Math Alignment Results:
Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
Grade 8					
Algebra	**8**	**14**	**22**	**3**	**47**
1	1	5	6	2	**14**
2	3	5	5	0	**13**
3	1	2	5	0	**8**
4	3	2	6	1	**12**
Geometry	**2**	**3**	**7**	**0**	**12**
1	1	1	6	0	**8**
2	1	2	1	0	**4**
Measurement	**4**	**6**	**2**	**4**	**16**
1	4	6	2	4	**16**
Number Sense	**2**	**12**	**6**	**0**	**20**
1	1	3	2	0	**6**
2	1	6	2	0	**9**
3	0	3	2	0	**5**
Stats & Prob	**0**	**4**	**4**	**2**	**10**
1	0	1	2	0	**3**
2	0	3	2	2	**7**

Table 4 (continued)

Post-Reconciliation Math Alignment Results:

Indicator by Achievement Level for Grades Kindergarten - High School

	Achievement Level				
Indicator	Introducing	Developing	Applying	Advancing	Total
High School					
Algebra	**4**	**10**	**15**	**9**	**38**
1	1	5	7	4	**17**
2	2	5	4	1	**12**
3	1	0	3	4	**8**
4	0	0	1	0	**1**
Geometry	**2**	**2**	**5**	**1**	**10**
1	0	1	3	0	**4**
2	2	1	2	1	**6**
Measurement	**9**	**8**	**2**	**5**	**24**
1	9	8	2	5	**24**
Number Sense	**3**	**7**	**5**	**6**	**21**
1	0	2	4	4	**10**
2	2	2	1	1	**6**
3	1	3	0	1	**5**
Stats & Prob	**6**	**15**	**5**	**10**	**36**
1	5	13	4	5	**27**
2	1	2	1	5	**9**